

Notice No.2

Rules and Regulations for the Classification of Naval Ships, January 2018

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Please note that corrigenda amends to paragraphs, Tables and Figures are not shown in their entirety.

Issue date: June 2018

Amendments to	Effective date	IACS/IMO implementation (if applicable)
Volume 1, Part 3, Chapter 2, Section 3	Corrigendum	N/A
Volume 1, Part 3, Chapter 3, Section 2	Corrigenda	N/A
Volume 2, Part 3, Chapter 2, Section 4	Corrigenda	N/A
Volume 2, Part 5, Chapter 1, Section 3	Corrigenda	N/A
Volume 2, Part 7, Chapter 1, Section 4	Corrigenda	N/A
Volume 2, Part 9, Chapter 1, Section 1	Corrigendum	N/A

Volume 1, Part 3, Chapter 2 Ship Design

■ Section 3 Main hull structure

3.5 Single bottom structure

3.5.1 In general, the floors in way of the ~~stern tubes~~ **stern tubes**, shaft brackets, etc. are to provide effective support for these items.

All instances of stern tube(s) have been replaced with stern tube(s) throughout this Ruleset.

Volume 1, Part 3, Chapter 3 Ship Control Systems

■ Section 2 Rudders

2.6 Rudder force

2.6.1 The lateral rudder force at the centre of pressure is to be determined for both ahead and astern conditions as follows:

$$C_R = 132K_1K_2K_3AV^2 \text{ N}$$

where

K_1 = aspect ratio correction factor

$$= \frac{\lambda + 2}{3} \text{ but is not to be taken greater than 2.}$$

$$\lambda = \frac{h_R^2}{A_t} \text{ but is not to be taken greater than 2.}$$

2.17 Bearings

Table 3.2.13 Bearings

Item	Requirement
(5) Main bearing housing wall thickness, see Note 5	Greater than $0,2d_c$

Volume 2, Part 3, Chapter 2 Shafting Systems

■ Section 4 Design and construction

4.2 Intermediate shafts

4.2.1 The diameter, d , of the intermediate shaft is to be not less than that determined by the following formula:

$$d = Fk \sqrt[3]{\frac{P}{R} \left(\frac{560}{\sigma_u + 160} \right)} \text{ mm}$$

F = 95 for turbine installations, electric propulsion installations and engine installations with ship type couplings
= 100 (90,5) for other engines

σ_u = specified minimum tensile strength of the shaft material, in N/mm^2 (kgf/mm^2), see Vol 2, Pt 3, Ch 2, 3.1 Materials for shafts 3.1.2.

Volume 2, Part 5, Chapter 1 Torsional Vibration

■ Section 3 Design

3.2 Limiting stress in propulsion shafting

3.2.3 In no part of the propulsion shafting system may the alternating torsional vibration stresses exceed the values of τ_c for continuous operation, and τ_t for transient running, given by the following formulae:

For $r < 0,9$:

$$\tau_c = \frac{\sigma_u + 160}{18} C_k C_d (3 - 2r^2) \text{ N/mm}^2$$

$$\tau_t = \pm 1,7 \tau_c \frac{1}{\sqrt{C_k}} \text{ (for } r < 0,8 \text{)}$$

For $0,9 \leq r \leq 1,05$:

$$\tau_c = \frac{\sigma_u + 160}{18} C_k C_d 1,38 \text{ N/mm}^2$$

For $r < 0,9$:

$$\tau_c = \frac{\sigma_u + 160}{18} C_k C_d (3 - 2r^2) \text{ N/mm}^2$$

and where $r < 0,8$

$$\tau_t = \pm 1,7 \tau_c \frac{1}{\sqrt{C_k}} \text{ N/mm}^2$$

For $0,9 \leq r \leq 1,05$:

$$\tau_c = \frac{\sigma_u + 160}{18} C_k C_d 1,38 \text{ N/mm}^2$$

Volume 2, Part 7, Chapter 1 Piping Design Requirements

■ Section 4 Materials

4.1 Metallic materials

4.1.1 Materials for Class I and II piping systems and components as defined in Table 1.2.1 Classes of piping system, also for shell valves and fittings and fittings on the collision bulkhead, are to be manufactured and tested in accordance with the Rules for the Manufacture, Testing and Certification of Materials, July 2017, incorporating Notice No. 1 & 2 the Rules for the Manufacture, Testing and Certification of Materials, July 2017, incorporating Notice No. 1 & 2 (hereinafter referred to as the Rules for Materials).

4.1.2 Materials for metallic castings and forgings for Class I and II piping systems are to be produced at a works approved by Lloyd's Register (commonly referred to as 'LR') and are to be tested in accordance with the Rules for the Manufacture, Testing and Certification of Materials, July 2017, incorporating Notice No. 1 & 2 the Rules for the Manufacture, Testing and Certification of Materials, July 2017, incorporating Notice No. 1 & 2 (commonly referred to as the Rules for Materials).

Volume 2, Part 9, Chapter 1

General Requirements for the Design and Construction of Electrotechnical Systems

■ Section 1 General requirements

1.4 Documentation required for design review

1.4.1 The documentation in Vol 2, Pt 9, Ch 1, 1.4 Documentation required for design review 1.4.2 to Vol 2, Pt 9, Ch 1, 1.4 Documentation required for design review 1.4.26 is to be submitted for design review.

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